RiverPro VTEC Implementation User Notes

08/15/2002

Basic RiverPro Operation:

RiverPro starts up as before - determines recommended info (product type, points to include, impact statements and crests to use).

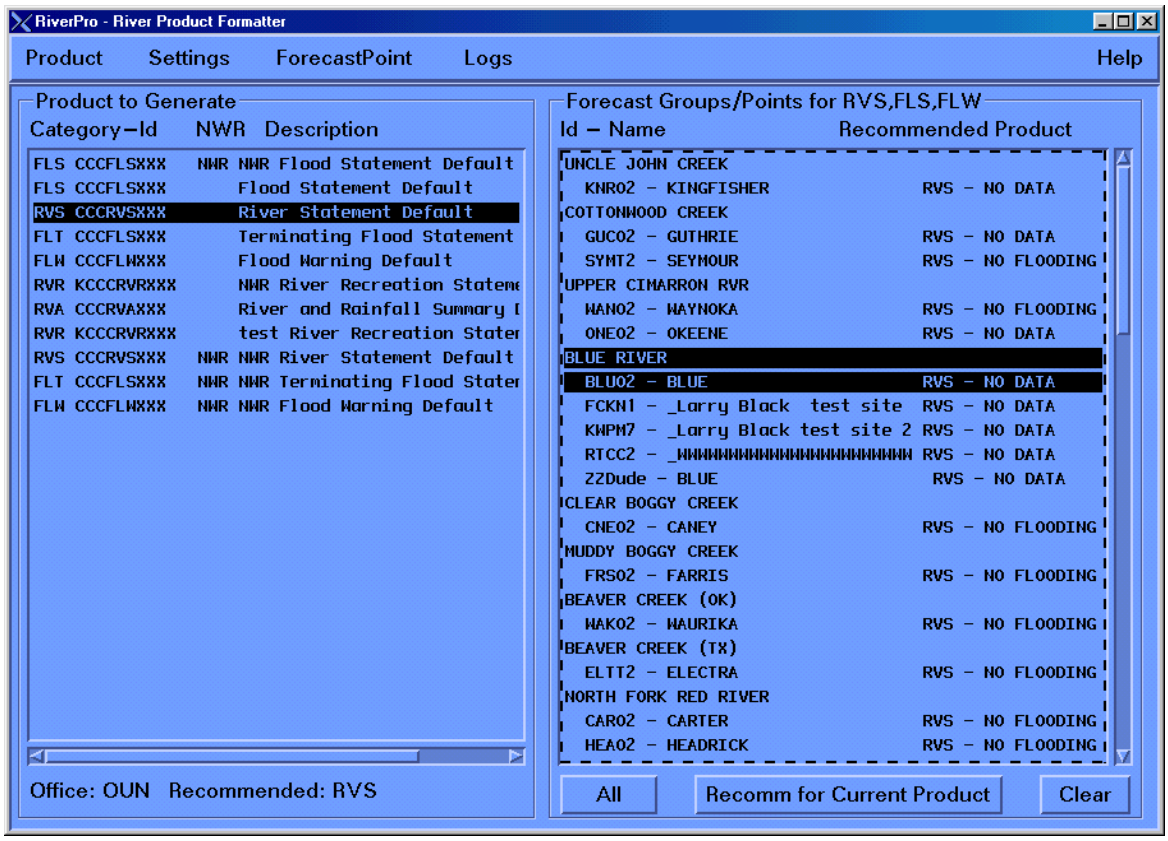

Figure 1 RiverPro Product Formatter Main Display

RiverPro loads up default settings for an OUP style product (i.e. not for an NWR product) as before. These settings can have predefined instructions that indicate whether to segment or not, and if so, they say whether to segment by forecast point, forecast group, or county. If segmenting, the user can choose whether to include the VTEC codes or not.

RiverPro provides an interface for modifying all settings, including the product structure such as segmented or not, and if so, how segmented from the Settings|Modify product sections...

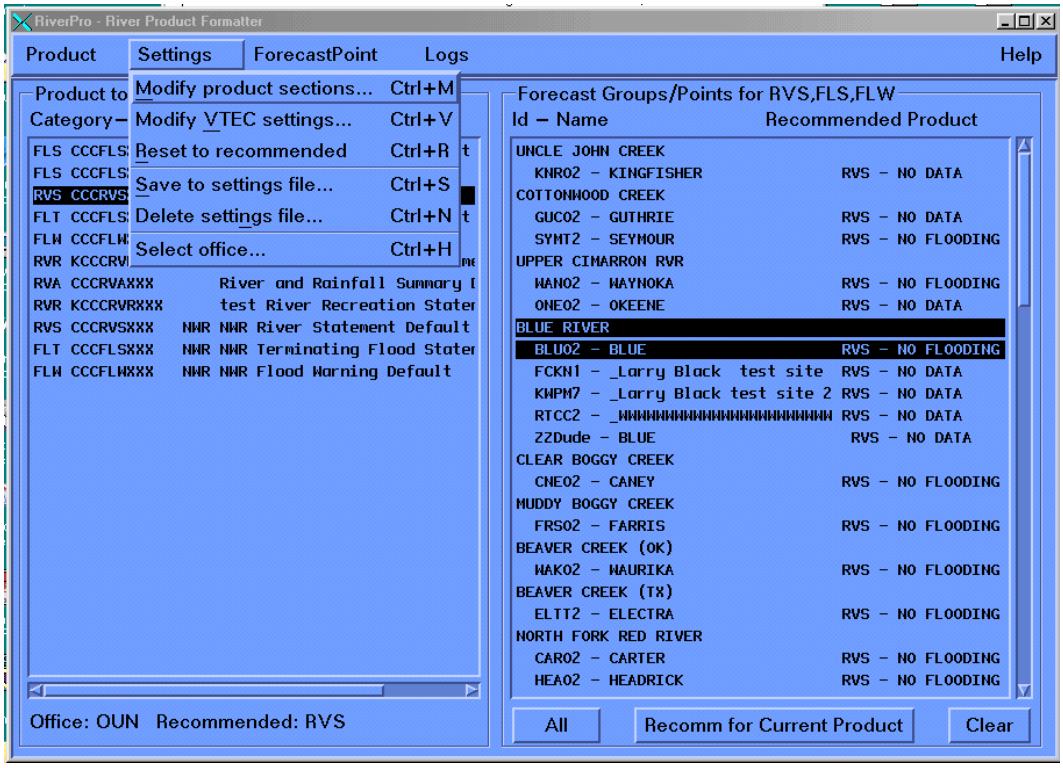

Figure 2 RiverPro Settings Pull Down Menu

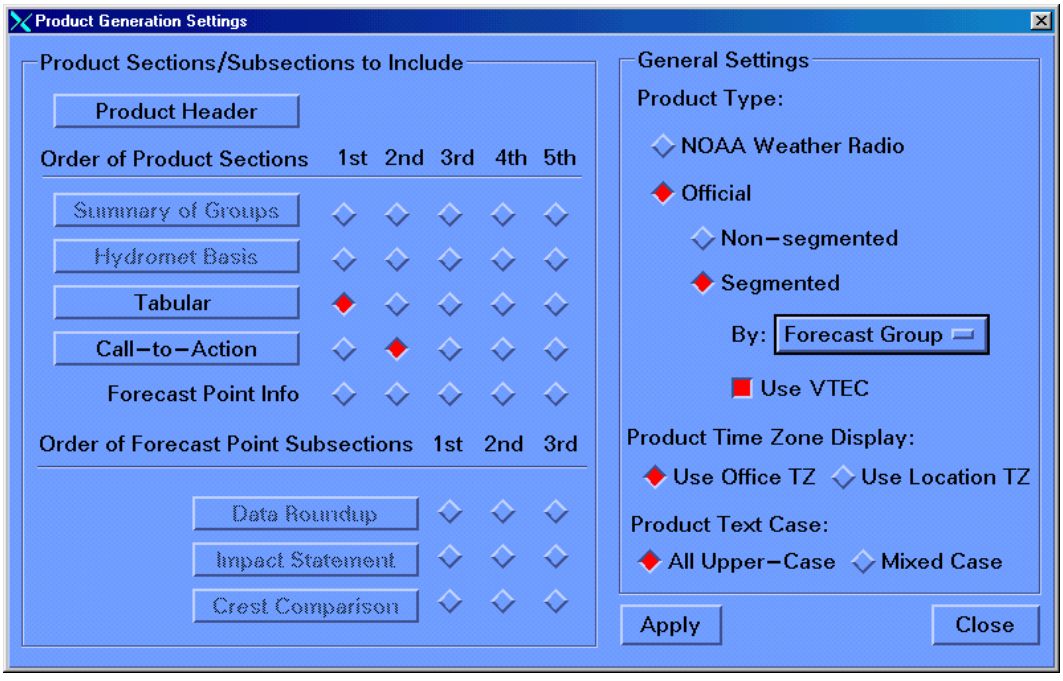

Figure 3 Product Generation Settings Display (Modify Product Sections)

RiverPro has a new user window to review previous VTEC events and to propose new VTEC information, with recommended values and with the ability to override select VTEC codes. This window is available from the main menu bar Settings|Modify VTEC Settings...

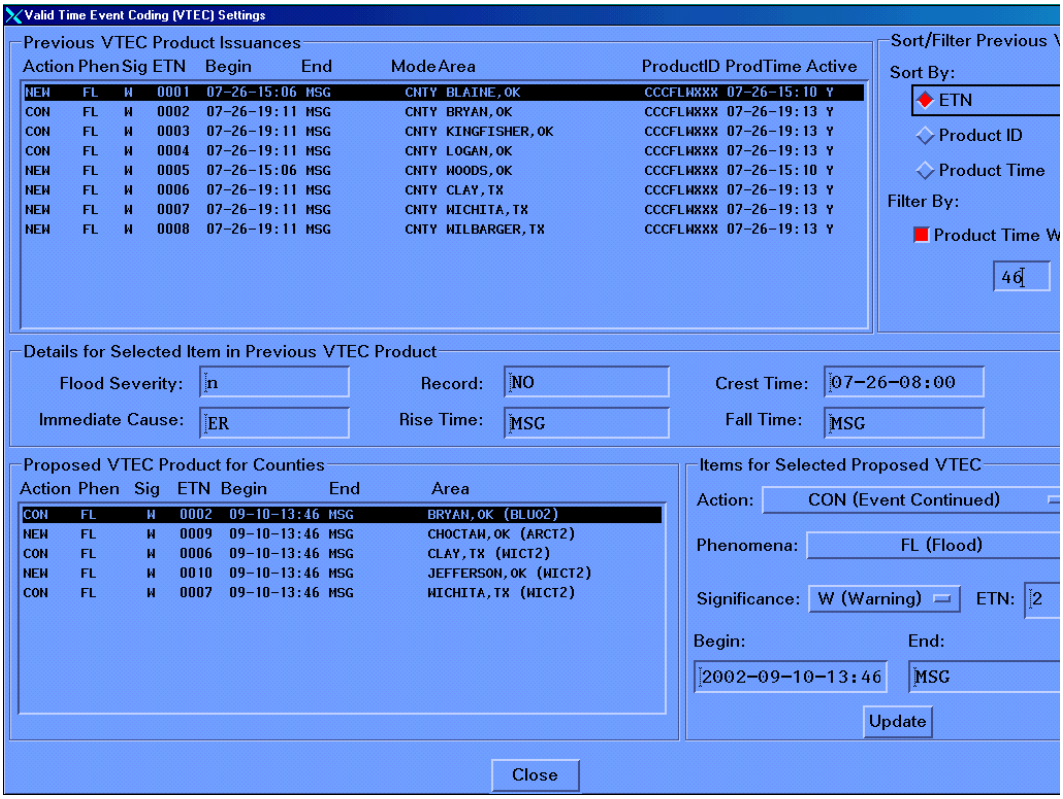

Figure 4 Valid Time Event Coding (VTEC) Settings Window

RiverPro determines recommended VTEC information when [(loading the VTEC GUI) or (when creating the product) and when the VTEC values are not already set]. To determine recommended VTEC information, the full height/flow time series is read; if there are many stations included in the product, this can take a moment.

RiverPro then generates the product accordingly; the VTEC lines are described later.

If the VTEC product is issued, information on the issuance is logged in the IHFS database, to be used for future VTEC product generations to determine the recommended values for certain VTEC fields. The new IHFS tables are *VTECaction*, *VTECevent*, *VTECphenom* and *VTECsignif*.

RiverPro GUI modifications for VTEC implementation

New options available in the drop down settings menu bar option Settings|Modify product sections...

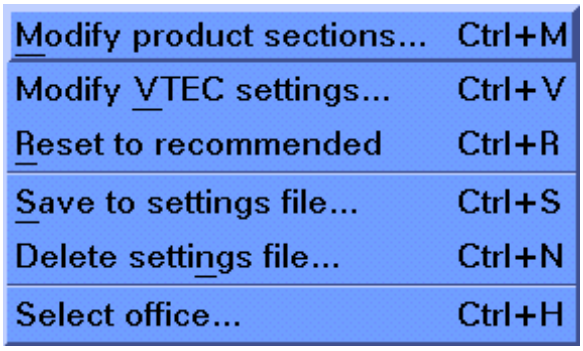

Figure 5
RiverPro Settings Pull Down Menu

When the "Modify product sections..." button is selected, the Product Generation Settings GUI is displayed where the option to "Use VTEC" is made available.

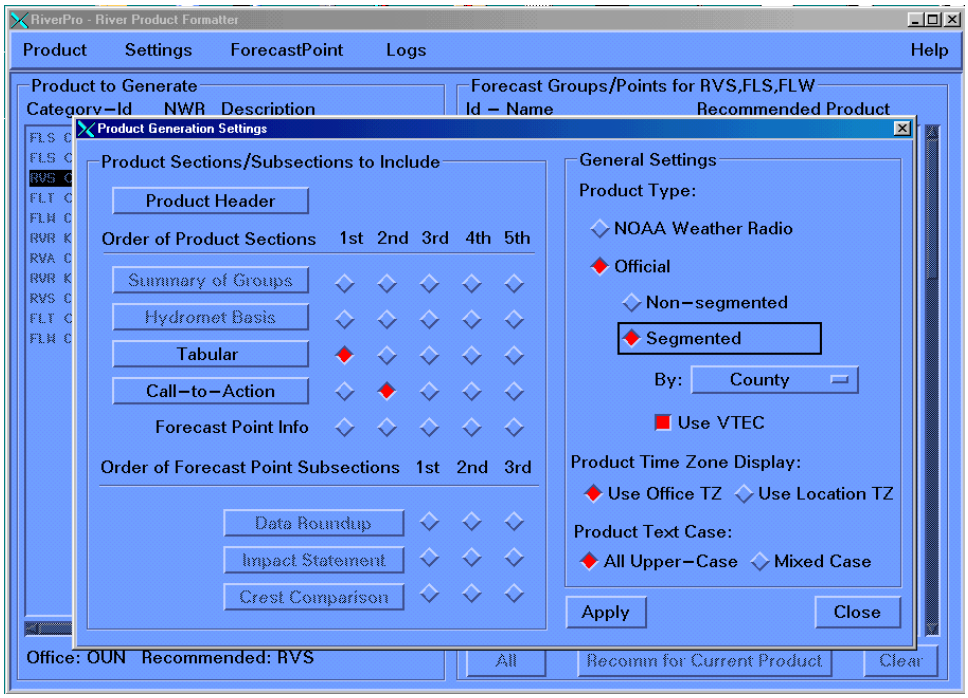

Figure 6 Product Generation Settings Window

A new window that displays information from previous VTEC issuances and specifies "proposed" segment VTEC fields, allows editing of the various coded items (in the future, an add "delete" button for previous events will be available, just in case a manual cleanup is needed)

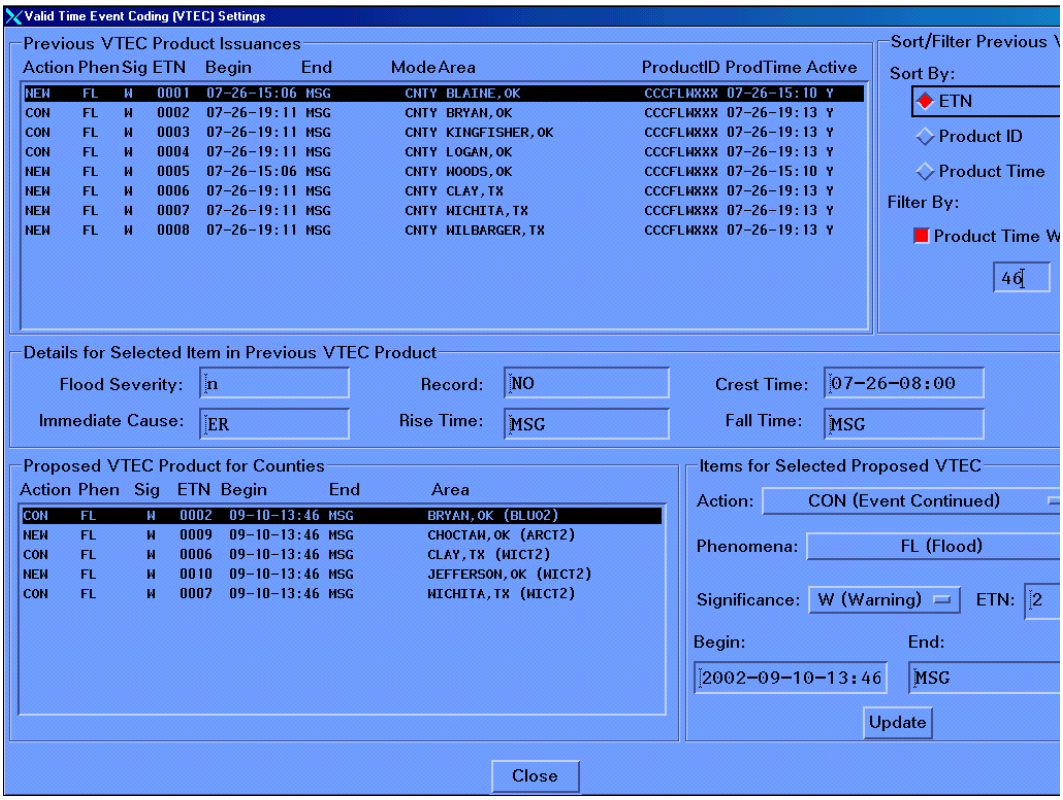

Figure 7 Valid Time Event Coding (VTEC) Settings Window

1. Events resulting in RiverPro determining the recommended VTEC information

RiverPro provides recommended values for the VTEC fields, when the user has selected the VTEC option. Note that the VTEC option is only selected when the product is specified to be segmented. A product is segmented in one of three modes: by *forecast point*, by *forecast group*, or by *county*.

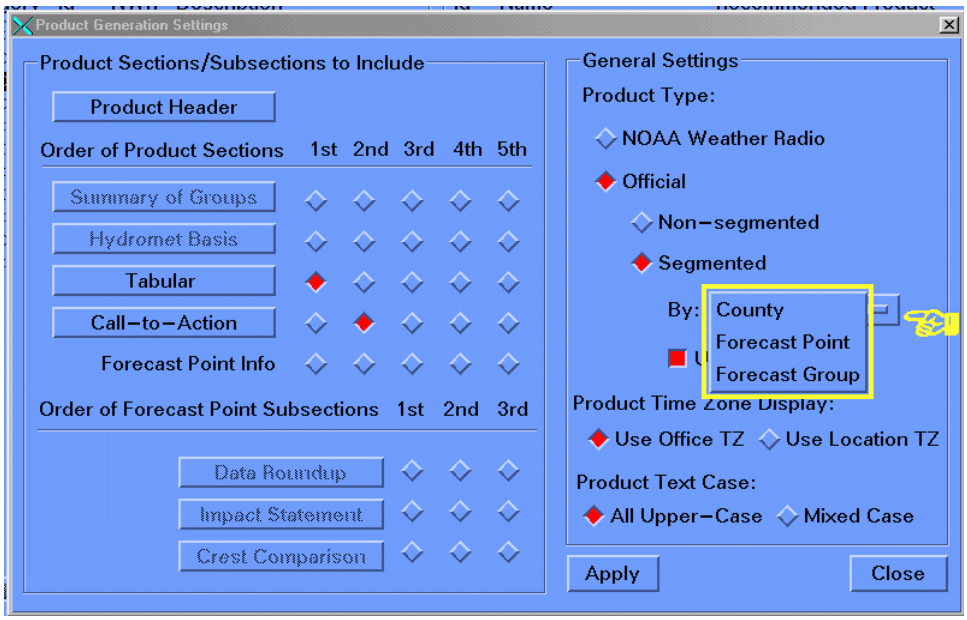

Figure 8 Segmented By options in the Product Generation Settings GUI

The recommended values are determined for each segment upon the following actions:

a) the VTEC interface is selected (from the main window menu bar, select Settings|Modify VTEC settings)

b) the product is created (from the main window menu bar, select Product|Create).

Once the VTEC fields have proposed values defined for them, they are not reset for the given VTEC entity (forecast point, group, or county) if the Update button is used in the VTEC GUI.

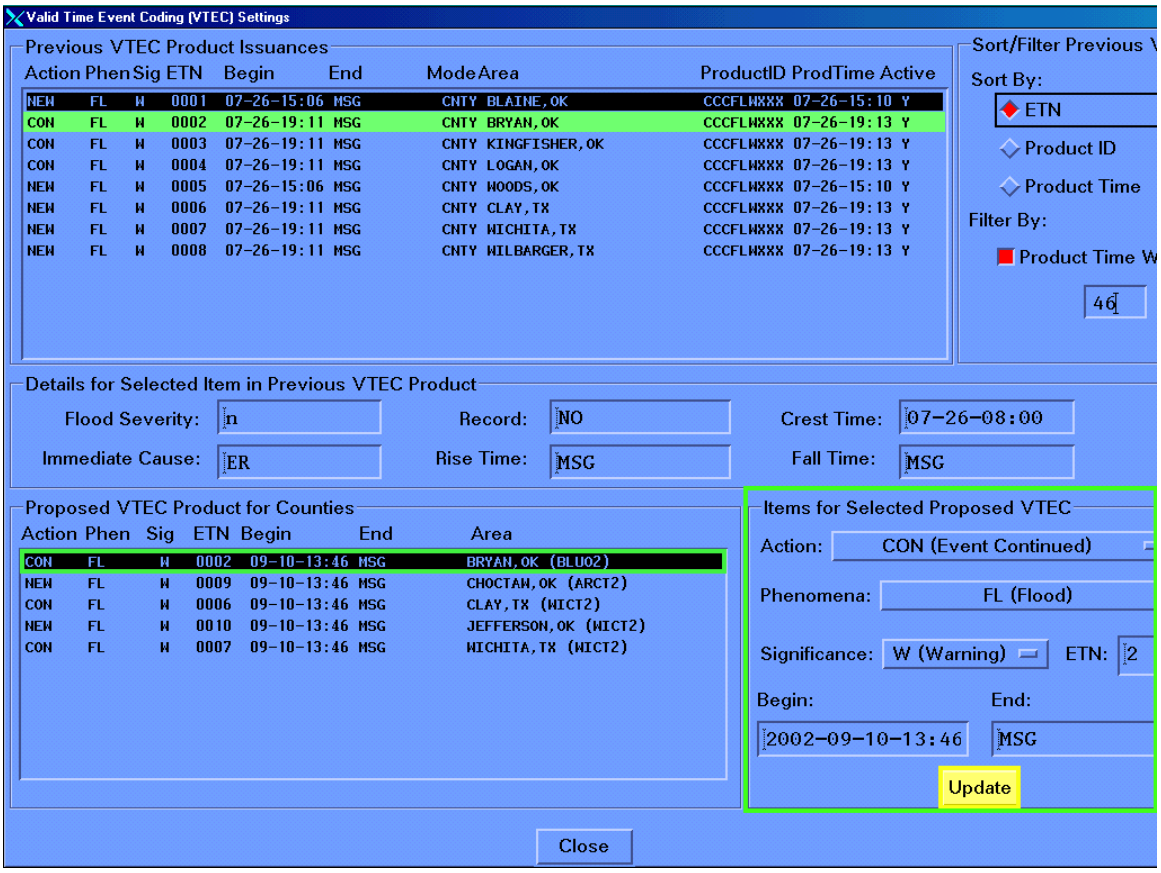

Figure 9 Proposed values maintained if the Update button is selected.

This ensures that user changes are preserved. After any Update, the values for the VTEC entity are reset by the program if they have been reset to "missing". This reset to missing occurs for two cases:

a) when switching the segment mode in the Product Sections (access from the main window menu bar Settings|Modify product sections - See Figure 8). This includes switching between "no segmenting" or any of the three segment modes.

b) when loading a product definitions (i.e. pcc) file.

The program intentionally sets the recommended values for a minimal number of actions to allow the preservation of user changes to the recommended values. This behavior has a notable effect on the event tracking number (ETN) selected, because the program uses the next available ETN for new events. Therefore, if starting with 5 segments, then for example, the ETNs 43-47 may be claimed, but if then the user decides that the middle three segments should not be in the product, then the numbers 43 and 47 will be used, but the numbers 44-46 will be unused. The

user can interactively change the ETNs as desired but this will not be done automatically.

2. Values Recommended For VTEC Lines

For the 1st line:

Generally speaking, the 1st line fields are based on the product, although they can be changed for individual segments.

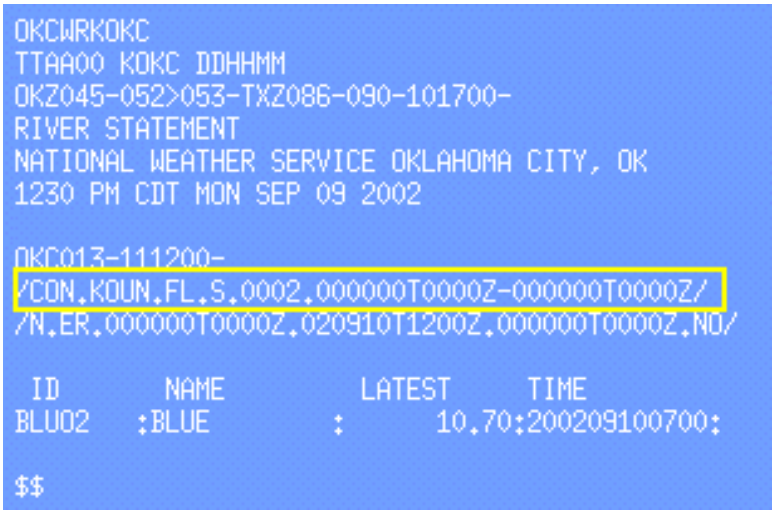

Figure 10 First line in VTEC code is highlighted

1. Action Code: Eligible values= NEW, CON, EXT/EXA/EXB, CAN, EXP, COR, TES; The action code is set based on the previous event, if one exists, for the VTEC geo entity. If no previous event exists, then the action code is set to NEW. Otherwise, it is set to CONtinued, EXTended in time, or EXPired. [later, provide precise algorithm details.] (CAN, EXT/EXA/EXB, COR, TES can be manually selected) In figure 10 above, the Action Code is set to NEW.

2. Office Id: Uses the current selected office, not necessarily what is in the hsa field in the admin. table. If this field is 3 characters or less, a "K" is prefixed to the office id. Otherwise, the VTEC field used is unchanged from the currently selected office. In figure 10 above, the Office Id is OUN.

3. Phenomena: Indicates the type of event that is occurring. Assumes FL for flood. In Figure 10 above, the Phenomena is FL (flood).

4. Significance: Eligible values=**W**arning, w**A**tch, advisor**Y**, **S**tatement, **O**utlook, **F**orecast, sy**N**opsis;

If FLW or FFW, use W
Else if FLS or FFS, use S
Else if FLT, use S
Else if FFA, use A
Else use S

In figure 10 above the Significance is **S** (statement).

5. ETN: Only determined for Warning, Watches and Advisories. The algorithm for determining the recommended ETN is:

If the product being considered has a significance code of watch (W), warning (A), advisory (Y), or statement, then a recommended ETN is computed. The ETN is determined for each geo-entity (i.e. forecast point, group, or county), using the following algorithm:

- A search is performed of previously issued events for this geo entity that match the specified phenomena (e.g. FL). If
- If a previous event match was found, then that event is checked to see if it is still active. If it is active, then a new FINISH WRITEUP HERE!!!

In figure 10 above the ETN is 0002.

Consider only those previous events that match current geomode.- county, group, point.
Consider only those are for the same geoentity - specific county, group, point.
Check if any of the events are still active for the geoentity - determine this by searching for events that have not had a cancellation nor an Expiration issued, ??or their most recent issuance has the event end time pass.
If active, use the same number.
If not active, use an incremented number.

ETN set to 0 for outlook, forecast, or synopsis significance code (default significance code is Statement)

6/7. Begintime/Endtime: Set to be the same as the rise above/fall below time, without any additional +/- hours offset. If the begin time is missing, then it is set to the current time, so that there is always some default begin time. Note that the rise above/fall below time is not set if there is only one point, and it is above flood stage. The algorithm needs at least two points, as it will not make assumptions on when the past-thru time occurred if there is only one point. If the action code is NEW or CORrected, then rise above time is used for the begin time; otherwise the begin time is set to 000000.

For the 2nd line:

The VTEC 2nd line values are determined for the individual segment.

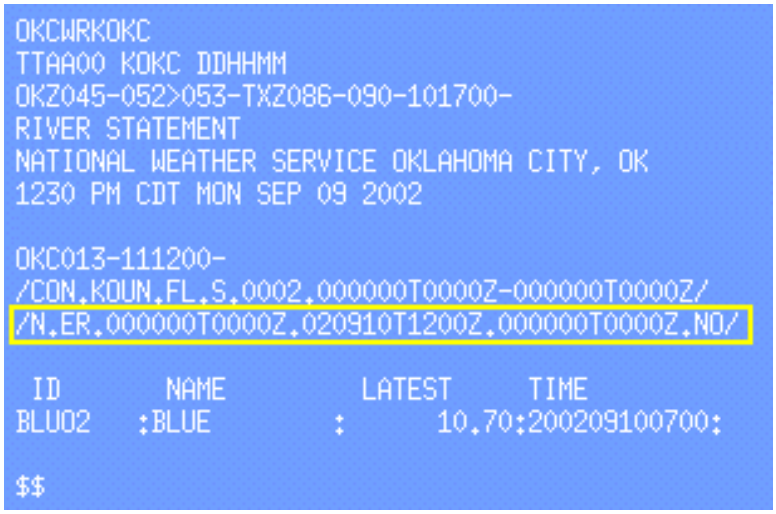

Figure 11 Second line in VTEC code is highlighted

1. Flood severity: Based on the max of the observed and max forecast value for the forecast point, forecast group, or county, as applicable. In figure 11 above the severity code is set to "N" (none).

2. Immediate Cause: What caused the phenomena? (Phenomena will be FL for flood). No method is provided for user to change this via the VTEC interface. In Figure 11 above the Immediate Cause is ER (excessive rainfall).

3. Start of flooding time: Based on the time of the rise above flood stage for the forecast point, forecast group, or county, as applicable. When in forecast group or county mode, the time is defined as the earliest of the times of all the associated forecast points. If the start time in the past, so be it.

4. Crest time: Based on the max of the observed and max forecast value for the forecast point, forecast group, or county, as applicable. When in forecast group or county mode, the time is defined as the earliest of the times of all the associated forecast points. If the crest time in the past, so be it.

5. End of flooding time: Based on the time of the fall below flood stage for the forecast point, forecast group, or county, as applicable. When in forecast group or county mode, the time is defined as the latest of the times

of all the associated forecast points. If in the past, so be it.

6. Record flood comparison: Based on the max of the observed and max forecast value for the forecast point, forecast group, or county, as applicable. When in forecast group or county mode, the comparison is defined as the highest of the times of all the associated forecast points. Presently, does check for record only, not for near-record value. In figure 11 above the record flood comparison is NO (a record flood is not expected).

Note: For all time fields, the same time format of yymmddThhmmZ is used. This includes the 2nd line time fields, whose format was not updated in the Implementation Plan document to use this 12-character time format specified in the 1st line.

3. Usage of Template Variables in Summary Body Section When In County Segment Mode

Forecast group variables are used in the summary body section (not the summary prologue section). This poses a complication when in the County segment mode, since the summary body section should say things about the county for which the segment applies but the template variables have names that apply to forecast groups (i.e. <Grp...>). Two options were available for dealing with this situation. One option was to establish a mirrored set of template variables for county mode, so that all applicable <Grp...> variables would have a similar <Cnty...> equivalent. This approach was rejected because it would force the user to have completely different template definitions for the two segment modes (group versus county). The second option was adopted instead, which involves using the same named-variables regardless of whether in forecast group segment mode or county segment mode. This allows the same templates to be used for either mode. So, when in county segment mode, the "group" variables will actually load the county info, despite the variable's name. Although this may be a bit confusing, it was deemed the better of the two options.

The following variables are loaded with forecast group or county info, depending on the segment mode:

<GrpId>, <GrpIdName>: (When in county segment mode, the <GrpId> variable value will be: countyname, stateabbrev; the <GrpIdName) will be: countyname, statename)

<GrpFpList>

<GrpMaxCurCat>, <GrpMaxCurCatName>
<GrpMaxFcstCat>, <GrpMaxFcstCatName>

<GrpOMFCat>, <GrpOMFCatName>

<GrpObsFound>, <GrpFcstFound>, <NumGrps>

The county variable <CountyList> always applies to counties, regardless of the segment mode, and the <RiverList> variable is also not affected by the segment mode. The group variables that ALWAYS apply to groups, regardless of the segment mode, are: <GrpList> and <GrpsFPList>.

Another behavioral note about the summary section: When in county or group mode, the segment body is always at the top of the segment body. There is no way to specify its location otherwise. Also, if segmenting by county or forecast group, and the product instructions specify generation of the summary section only, then the segments will not be created since the segment location/inclusion in the product is based on the location of the tabular or point-specific section. This means that the tabular or point-specific section must be included to use the segmenting by forecast group or county feature.

4. Specifying Summary Body Section Template When In County Segment Mode

For county mode, the ability to specify unique templates for individual counties is not available. The feature is available for forecast groups, using the PCC keyword special_template, which has user interface support in the RiverPro interface. This is accessed from the main window menubar by selecting Settings|Modify product sections, then clicking on Summary of Groups; the summary body template selection is controlled in the bottom part of the window. When in county mode, a single template is used in the summary body for all counties.

5. Effect of Segment Mode on Product Information Repetition

The VTEC option is only valid when generating products in a segmented fashion. The segmenting is defined as either being by *forecast point*, *forecast group*, or by *county*. Note that there are relationships between the segmenting mode, and whether data are repeated or not in different segments of the product. If segmenting by forecast point, then the given county may be referenced for multiple points, but there would be no repeated info. If by forecast group, given county may be referenced for multiple groups, but there would be no repeat info. If by county, then each county would have its own block given point may be in multiple counties and therefore is repeated, but no UGCs repeated.

6. Miscellaneous Items

a) Assumes that UGC line is always followed by VTEC line(s).

b) RiverPro is not able to specify the BBB portion of product header if ever correcting or

amending a product, as possibly indicated by VTEC action code (e.g. EXT, EXA, EXB) definitions.

c) The product can still have a “product-wide” UGC line, normally specified in the product mass media header, using the existing RiverPro variable, in addition to any UGC coding at the beginning of each segment.

d) VTEC is normally only used for non-routine events, although RiverPro won’t prevent someone from using it with an RVS.

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